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The Locust Tree.

THERE is not in Europe a more interesting tree for Americans to visit than the venerable Locust in the garden of the Museum of Paris, whose portrait is reproduced on page 311. The first of its race to grow in the soil of Europe, it has survived for more than two centuries and a half the wars of the elements and the social cyclones which have swept over it. The seed from which it sprung was planted in 1635 by Vespacian Robin, gardener of Louis XII., in the Jardin du Roi, now called the Jardin des Plantes. Vespacian Robin was the son of a gardener more famous than himself, Jean Robin, who had charge of the Royal Gardens under Henry of Navarre; and it was for the elder Robin that Linnæus, more than a century after his death, named the genus Robinia, to which our Locust-tree belongs. Little is left of the old tree but the shell of the trunk and a few feeble branches which clothe themselves year after year with leaves and flowers, testifying to the wonderful vitality of the Locust-tree and to the care which has been bestowed upon this specimen by the authorities of the garden, the most interesting in the world, perhaps, in its historical associations with men famous in the annals of botany.

The Locust-tree (*Robinia Pseudacacia*) has excited, from a cultural point of view, more interest than any other inhabitant of the American forests. There is no other North American tree about which whole volumes have been written, and no other of our trees has been so enthusiastically praised or so widely scattered by cultivation.

The earliest account of the Locust-tree was published in 1640 by Parkinson in his classical "Theatrum Botanicum," it having been cultivated in England about that time by the Dutchman John Tradescant, a great traveler and botanist, who held the position of gardener to Charles I. Evelyn, in his "Sylva," published in 1664, records the fact that the Virginia Acacia thrives in the King's new plantation in St. James Park; while his great French contemporary, Duhamel, gave a few years earlier specific directions for its cultivation. A hundred years later the Locust had so grown in esteem in Europe that something was said about it by nearly every writer who discussed rural economy or the possibility of increasing national wealth through the cultivation of exotic trees. The first book devoted entirely to the Locust was published in Paris in 1803. It is a small octavo of 314 pages, and is entitled "Lettre sur le Robinier connu sur le nom impropre de faux Acacia." It was written by M. N. François de Neufchateau, a Senator and member of the Institute. This work contains the essence of all that had been previously published about the tree in France, and a great deal of information relative to its culture and uses. A translation of portions of Monsieur François' essay is published in an English book on the Locust, which appeared from the pen of W. Withers, of Holt, in Norfolk, in 1842, under the title of "The Acacia-Tree: Its Growth, Qualities and Uses." William Gobbett, however, better known perhaps as the vituperative political essayist, Peter Pindar, than as an enthusiastic and successful planter of trees, did more by his writing and example than any other man to make known the value and spread the cultivation of the Locust-tree.

Cobbett, during a forced residence in the United States from 1817 to 1819, occupied himself in farming on Long Island, where he established a small nursery for the propagation of fruit and timber-trees. It was at this time that he came to the conclusion "that nothing in the timber line could be so great a benefit as the general cultivation of the Locust." On his return to England he carried a small package of the seeds of this tree home with him and began the systematic raising and selling of Locust-trees, his total sales amounting to more than a million plants. This he tells us in his book called "The Woodlands," which, in some respects, is the best book on tree-planting which has been written in the English language. The author in his preface gives his reasons for having written it: "Many years ago," he says, "I wished to know whether I could raise Birch-trees from the seed. I looked into two French books and into two English ones without being able to learn a word about the matter. I then looked into the great book of knowledge, the 'Encyclopædia Britannica'; there I found in the general dictionary, 'Birch-tree, see Betula, Botany Index.' I hastened to Betula with great eagerness; and there I found, 'Betula, see Birch-tree.' That was all; and this was pretty encouragement to one who wanted to get, from books, knowledge about the propagating and rearing of trees." There are tree-planters of the present generation who turn to the literature on the subject with results which are hardly more satisfactory. Cobbett's book has long been out of print, but no other work gives such clear and specific direction for rearing and planting trees, and there are portions of it which might well be reprinted for general circulation.

Cobbett's enthusiasm for the Locust-tree, and his zeal in propagating it, caused it to be planted generally in England in his time, and the fashion, as is often the case with English fashions, crossed the Atlantic, and fifty or sixty years ago no tree was so often planted in this country. Remnants of these old plantations may be seen up and down the Hudson River and in the neighborhood of all our seaboard cities; and the Locust is now fairly naturalized in a large part of the country east of the great plains, although originally its range was a comparatively restricted one, it being found only in the forests of the Alleghany Mountains, from Pennsylvania to northern Georgia, and, doubtfully, in a few isolated stations west of the Mississippi River. So far as the United States is concerned, however, the Locust-tree has not fulfilled the hopes of the early planters. It is preyed upon in this country by a horde of insects who bore into the trunk and destroy the trees or the value of their timber, and the prophecy of the younger Michaux, that the Locust-tree would become more common in Europe than in its native country, has probably been fulfilled.

It is, however, one of the few American trees, if not the only one, which has become really naturalized in Europe, and there is no other exotic tree which travelers in central

Europe see more frequently. This is due, in part, to the fact that it has been planted everywhere along the lines of railroads to hold the soil on the embankments, and because it is the favorite tree for the embellishment of the grounds surrounding the stations.

Long cultivation of this tree has given birth to many varieties, and of these the one known as the Parasol Acacia, with a dwarf, compact, spherical head, usually grafted as a tall standard, is one of the most popular ornamental trees in Europe, where it lines countless miles of roadside and adorns innumerable villa-gardens.

The great value of the Locust-tree is found in the wood which it produces. This is heavy, exceedingly hard and strong, very close-grained, and capable of withstanding for a long time the effects of decay when placed in contact with the ground. This makes it one of the best woods known for fence-posts; it has many uses in ship-building, and is preferred to the wood of all other trees for tree-nails, for which purpose it is largely used. It grows rapidly from seed, which is produced in the greatest profusion, and it will adapt itself to almost every kind of soil. The rapidity of its growth is great, and thanks to the lightness of the shade cast by its compound leaves, it does less injury than most other trees to crops growing beneath its branches. The Locust is a good hedge-plant, too, and the fragrant white flowers are very beautiful. These are the qualities which have made the Locust popular, and were it not that it is so liable to the attacks of insects, the planters of the present day would be able to endorse all that Cobbett claimed for it.

An illustration in a recent issue of *The Garden*, London, indicates what delightful effects can be produced by naturalizing hardy spring-flowering plants in the grass. It represents a forest-scene in the grounds of Dunrobin Castle, with the turf about the trunks of the old trees thickly studded and completely carpeted with Snowdrops, which have been growing there from time immemorial.

There is certainly no more delightful and satisfactory form of gardening than that which naturalizes hardy plants, especially the plants which flower in early spring when every flower is doubly valuable. A thousand bulbs of the Poet's Narcissus, of the Snowdrop, or of the Squill, or of the Crocus, will produce infinitely more pleasure if they are planted in some wild spot by the edge of a wood or of a wood path, than the same number of plants are capable of giving in a formal flower-bed or border. Wild gardening, if the term is a permissible one, is the easiest and most economical of all forms of the gentle art. Once the plants are established in the proper soil and in the right situation, they require no further thought or care. All they need is to be let alone and to be allowed to go on growing and increasing and producing their flowers year after year.

The earlier in the autumn bulbs which produce their flowers in the spring can be set in the ground, the sooner they will become established and the better the results which they will give. This is the time, therefore, to study the lists of the dealers in plants of this sort, to determine which are to be planted and to order the bulbs.

There are a few rules which can be safely followed in gardening of this character. The most important of all is to select only such pieces of ground for planting with spring-flowering bulbs as need not be mowed until they have thoroughly matured their leaves, as the early cutting off of the leaves will weaken and finally destroy the bulbs. The turf of a lawn cut early and regularly with a lawn-mower is not, therefore, a suitable place for bulb-growing. If the grass is not cut until after the middle of June the leaves of nearly all the spring flowering species, even such late blooming ones as the Poet's Narcissus and the Wild Hyacinth, will be ripe enough to cut without injury; so that such plants can be naturalized in ordinary hay-fields, if it is desirable to do so, with perfect safety. Some judgment, too, must be used in selecting the plants to be employed in this sort of gardening. Those unchanged by cultivation are better suited for the purpose than plants which the gardener has long worked over. The double Daffodil looks out of place by the borders of a wood walk, while all the single Narcissus appear perfectly at home in such a situation. The wild Hyacinth and the other Squills, the Snowdrops and the Crocuses, never appear too fine for any bit of natural scenery, while a garden Tulip or a garden Hyacinth, gaudy and beautiful although they be in a formal parterre, spoil with their artificiality the simple beauty of a woodland glade or of a smiling meadow. In our climate, where the enjoyment of the earliest spring-flowering plants is often interfered with by melting snow and by the mud of late March and early April, few wild plants can be used with more safety and with a greater prospect of pleasure than the Poet's Narcissus and the wild Hyacinth (*Scilla campanulata*). The two flower at the same time and the blue bells of the latter make the most charming contrast with the pure white flowers of the former. They flower here simultaneously, too, with many of the native plants which are most desirable in the garden, such as the Trilliums, the Phloxes and the early Lady's Slippers.

So, to the owners of gardens we can only repeat what has been said so often before in these columns, that if they want to obtain the greatest amount of pleasure with the smallest outlay of labor and money, let them plant hardy bulbs, and the more the better; and the sooner their plans are laid and their plants ordered, the better will be their chances of success.

The Kecskemet Heath.

Heath—*Heide*—is in Germany a generic term for any stretch of sandy, uncultivated country, whether it be covered only with grass and scrubby, low vegetation or more or less generally with poor trees. Such a heath formerly stretched for many miles around the town of Kecskemet, in Hungary—an apparently limitless expanse of grass and shifting sand, which gave rough pasturage for herds of long-horned cattle and plethoric swine, guarded by peasants who, summer and winter, wore their characteristic sheep-skin coats, with the wool outside, and by the huge wolfish Hungarian sheep-dogs. A writer in the *Illustrirte Gartenzeitung*, of Vienna, tells, however, of the transformation which this semi-desert has undergone in recent times. Even in approaching Kecskemet by the railroad, he says, one is struck by this transformation, the road running for miles between embankments beyond which, instead of the former waste of drifting sand, bare of trees or shrubs, now extend luxuriant gardens, giving evidence of the most careful cultivation, vineyards and orchards succeeding on each other, or, most often, mingling their allied products. Closer observations only increase the surprise of the visitor. A half hour's drive from the suburbs in any direction takes him into real forests of fruit-trees, which cover many thousand acres of land, and, in their little clusters of farm-houses and peasant inns, sustain a population of 20,000 persons of the true ancient Magyar stock.

This great steppe, whose soil was of the coarsest sand, was to a large extent the property of the town, the municipality owning sixteen square miles—more, says our author, than the area of some of those little principalities into which the German kingdom was formerly divided. In order to redeem this district, the town, some thirty or forty years ago, granted a portion of it to its inhabitants on condition that it should be cultivated, recommending especially the planting of orchards. Now Kecskemet fruit is famous not only in Austria but in Russia, and in a good year brings the dealers of the town a profit of half a million dollars. Broad highways run for miles in all directions from the town, planted with hedges and avenues. It is interesting to note that the only trees our author mentions in this connection are of American origin. The Locust, he says, is most generally employed, but the Gleditschia (Three-thorned *Acacia*) is also much used, having proved an excellent protection against the storms which sweep over the heath and the drifting of its sands. Apples form the chief crop, although apricots are grown in such quantities that whole trains filled with them are dispatched during the season to various parts of Germany and Russia. Pears are likewise grown, and cucumbers, melons and paprikas, of which a great specialty is made. But the grape vies with the apple in importance. The vines are grown in the way usually adopted in southern Germany as well as in southern France, being closely

set without stakes. They cover the ground in the orchards between the trees, and are also trained on espaliers or fences along the highways and to form the divisions between the fields. The sandy soil seems to have protected them against the ravages of the phylloxera, and the quantity of wine they yield is large and ever increasing, although its quality is not so good as that produced on the hills in other parts of Hungary. When the development of this industry was first thought of the government planted an experiment station of large extent with six hundred varieties of the Grape, American as well as European sorts being tried, and with this was combined an experimental orchard. To-day the municipality also owns a "Town-garden" containing about one thousand fruit trees of the finest sorts, and itself administers large tracts of the former heath. But it is not more interested in improving its own property than in spreading information among private cultivators and encouraging them to new efforts. With these ends in view it has established a large agricultural school and in fourteen of the scattered little communes on the heath has founded village schools for the education of the neighboring peasant children. During the winter they are taught in the usual way from books, but in the spring the teacher grasps spade and hoe, and, in the extensive garden that adjoins the school, gives practical instruction in horticulture.

In short, within forty or fifty years, at a comparatively small outlay of money, a vast, forbidding desert has been transformed into a garden blossoming like the Rose, where no foot of ground is wasted, and where the once half-nomadic, half-savage population is steadily growing in intelligence as well as in wealth. And the town to whose municipality the credit for the work must be given, has itself profited by the increase of trade to a degree that is said to be fairly surprising. Intelligent direction and concerted effort, without any great expenditure of money, have accomplished these results.

Who is the Vandal?

MR. FERNOW is writing some tracts on Tree Topics in *Kate Fields' Washington*, and the first of the series is devoted to the education of those whose misguided affection for single trees leads them to shudder when any proper thinning out of park plantations is attempted. In the grounds of a public institution in Washington, planted by Downing, the trees are choked and disfigured for lack of proper care, and yet the officials will not allow a tree to be cut, being restrained, it is said, by sentiments of reverence. "You propose to cut a tree in this park?" cries the indignant enthusiast. "You are a vandal!"

"My friend," replies the critic, "it is you who are the vandal. It is you who lack a civilized conception of fitness and beauty. It is you who do not see that by allowing this tree to stand you are preventing the development of its more valuable neighbor. It is you who, from a purely sentimental motive which you call reverence, will suffer your pets to choke and stunt each other till the beauty of a whole group is marred, in which the doomed member has outgrown its usefulness.

"Mr. Downing adapted the groups of trees and the shrubbery to make a pleasing picture at the time. He knew that the individual parts could not always retain their relation to the whole, and he never intended that they should. May his æsthetic spirit and his conception of the fitness of things descend upon those of our public officers by whose hands the beauty of our national capital may be either preserved and improved, or marred and destroyed."

Danger to Orange Groves in California.

AN important discussion is now going on respecting Florida-grown Orange-trees, which have been sold by thousands in California. Several nurserymen who found that the margin of profit was large, began to bring Florida Orange-trees to California several years ago, and at last established nurseries in Florida. The purple, or oyster-shell scale (*Mytilaspis citricola*) has been discovered on Florida stock in southern California, and so have the "long scale" (*M. Gloverii*), and the "chaff scale" (*Parlatoria Pergandii*), all of which are illustrated and described in Hubbard's "Insects Affecting the Orange." The "chaff scale" is often found on Orange-trees imported from China and Japan, and the inspectors have ordered more than one affected lot of trees to be destroyed. The Florida "red scale" (*Aspidiotus Ficus*) has also appeared in southern California on Florida stock, and on trees brought from Brazil. Professor Couquillett is reported in the *Rural Californian* as saying that ten new pests have been found this year on imported stock. The newspapers and horticultural societies are taking up the matter and urging prompt measures to destroy every infected tree.

An orchardist at Santa Ana writes about an allied species of red scale, the *Aspidiotus aurantii*, in the following vivid manner: "The red scale is as dangerous and infectious to fruit interests as small-pox is among human beings. If any one wants to know what a destructive thing it is, let him come down in this vicinity and visit Orange. It is a pitiful sight to see what ruin has been caused by the indifference of the people when the pest first came into this valley. When I first saw Orange, in the fall of 1884, I thought it the garden spot of America. I never shall forget the luxuriance of the acres of Orange-orchards, and the prosperous looking places. There were then shipments of many car loads of Oranges from Orange station every spring, and there were dozens of men who got from $2,000 to $4,000 a year for their Orange-crops. The red scale came there in the spring of 1885. People talked a little about it, and a few said the pest would be serious unless stamped out at once. Their fears were ridiculed, and every one went on in an easy, indifferent way, while the little red scale multiplied, spread and devoured, until at last the people saw acre after acre of Orange-trees dead and dying. In Orange to-day, where there were hundreds of fine orchards five years ago, the land is now covered with the decaying stumps of Orange and Lemon-trees."

This sort of thing stirred up the Pomona and Riverside people, and their Inspectors have been at work for two months, examining every tree in the district, whether set in nursery or orchard. They long ago quarantined against the infested districts of California, and now the quarantine will undoubtedly be extended to all Florida-grown trees.

Niles, Cal. *Charles H. Shinn.*

Legislation Against Fungous Diseases in New Jersey.

LAST year a large portion of my time was occupied in an investigation of the diseases of the Cranberry, the results of which were published in Bulletin 64 of the Experiment Station. Aside from the "Scald" of the Cranberry (sometimes called the "Rot") the next worst enemy is the Gall Fungus. This last takes a second place only, because it is at the present time very limited in the area upon which it was seen. A single large bog only was found infested with it, but from a study of the habits of the fungus it is evident that it spreads with the water during spring, and if it should effect an entrance into a bog it would soon develop in all parts through which the contaminated water flows. Fortunately, the water from the infested bog in question does not flow into any other bog or it would most certainly carry the disease there with it. It is, however, likely that the germs may be taken from one bog to another by birds and other animals, and by winds drifting the diseased leaves over the crust of snow upon fields in winter. The danger of this last mode of spreading infection is increased by the fact that several kinds of plants closely related to the Cranberry and growing upon the borders of the bog are also infested, and some of them drop their leaves in autumn.

The Gall Fungus has proved almost ruinous to the infested bog, and, because of this, and that it is as yet so circumscribed, the following law has been passed to cover all such cases of fungous diseases:

Whereas, The officers of the State Agricultural Experiment Station have discovered certain new fungous growths that threaten serious injury to important agricultural interests of the state, therefore,

1. Be it enacted by the Senate and General Assembly of the State of New Jersey: That when the officers of the State Agricultural Experiment Station shall discover any new fungous growth which is doing injury to plants or vines, and while the same is confined to limited areas, they are hereby authorized and empowered to enter upon any lands bearing vines or plants so affected, and destroy the same by fire or otherwise as they shall deem best.

2. And be it enacted, That any damage to private property resulting from the operation of destroying the said fungous growth by the officers of the state shall be certified to by them and the amount of damage paid to the owners thereof from the same fund and in the same manner as is paid to owners of diseased animals by order of the State Board of Health.

3. And be it enacted, That expenditures under this act shall not exceed one thousand dollars in any one year.

4. And be it enacted, That this act take effect immediately.

Approved May 23d, 1890.

It will be seen that, according to this act, means can be taken

for the extermination of the Gall Fungus upon the infested Cranberry-bog. In this case it will mean not simply the burning or drowning of the diseased Cranberry-vines, but the destruction of those species of shrubs along the shore of the bog that are attacked by the galls. A mildew, quite fatal to Cucumbers under glass, was recently found within the state, and this may prove to be another case that can be successfully handled under the new law. In like manner, within the past fortnight, the station botanist has found a parasitic fungus unknown before in this country (*Peronospora Rubi*, Rabenh.) upon the cultivated Raspberry. This will need careful watching, and if found destructive, and, at the same time, limited to one garden, it can be eradicated. A larger field is already open for the exercise of the law; for example, the destruction of Plum and Cherry-trees already worthless from the ravages of the black knot, especially of those growing half wild in the roadways.

Rutgers College. *Byron D. Halsted.*

Plant Note.

Hybrid Firs.

Monsieur E. Bailly, writing in the *Revue Horticole*, describes under the name of *Abies insignis* and *Abies Nordmanniana speciosa* two hybrid Firs which have appeared in European gardens. The first originated in the nurseries of Monsieur Rennault of Bulgnéville, in France. It was raised from seeds of a tree of *Abies pectinata* grafted with *Abies Pinsapo* in 1848-49. The remarkable appearance of some of the seedlings raised from this tree led their owner to suppose at first that the graft had been effected by the stock, and that they were really the result of a graft-hybrid. Afterward, however, it was remembered that a tree of *Abies Nordmanniana* growing at a distance of four or five hundred feet produced male flowers, so that it is not improbable that the belief that the hybrid is the result of a cross of the flowers of *A. Pinsapo*, impregnated by the pollen of *A. Nordmanniana*, is correct. Perhaps not the least interesting part of the matter is that the hybrid plants have proved hardier than plants of *A. Pinsapo* growing with them. Speaking of the plants, Monsieur Bailly says "the affinity of the hybrid with *Abies Nordmanniana* and *A. Pinsapo* does not appear to be doubtful. It unites the two species by its botanical characters and establishes between them a sort of union. The habit of the trees, the arrangement of the branches, the color and the arrangement of the leaves, recall those of *A. Nordmanniana*, but the thickness of the leaves and their coriaceous consistency are rather those of *A. Pinsapo*. The arrangement of the leaves is intermediate between those of the two parents. In form their apex is not acuminate or often mucronate, like that of the mother-plant; nor truncate, like that of the pollen parent, but is subacute or obtuse. From an ornamental point of view this hybrid is not without value. It is, on the contrary, a very handsome tree, elegant and vigorous, of good habit, and one to which I wish to invite the attention of lovers of conifers."

The second of these hybrids, *Abies Nordmanniana speciosa*, was produced by Monsieur Croux, the nurseryman, of Aulnay, near Sceaux, in the neighborhood of Paris, who fertilized female flowers of *A. Nordmanniana* with the pollen of *A. Pinsapo* in 1871 or 1872, care having been taken at the time to remove from the plant of *A. Nordmanniana* operated on all the male flowers before they reached maturity. Another hybrid Abies exists in the garden of Monsieur H. de Vilmorin—a cross between *A. Pinsapo* and *A. Cephalonica*. Monsieur Bailly asks, in view of the rapid and vigorous growth of these three hybrids, if there may not be an advantage from an economic point of view in using them or other hybrids in forest plantations on a large scale. It is not, of course, improbable that a hardier, more vigorous and more valuable race of timber-producing trees may be obtained by hybridization, although until such a race could be fixed by long cultivation it will be necessary to resort to grafting in order to secure plants of the mixed breed.

New or Little Known Plants.

Cypripedium Philippinense.

OUR photograph of this interesting species on page 309 was made from a plant in Mr. Hicks Arnold's collection in this city, where it flowered in March of the present year. This handsome species was introduced from the Philippine Islands by Mr. John Gould Veitch many years ago, and long remained rare in cultivation. It is now more common, having been found by Roeberlen, a collector of Sander & Co., in a region which has not been made public. The plant is generally sold and known in gardens as *Cypripedium Roebelenii*, although there is apparently little doubt of its identity with the species from the Philippine Islands, which was, of course, described much earlier. The flowers, which are about three inches across from tip to tip of the upper and lower sepals, are distinguished by a broadly ovate, pointed, whitish upper sepal striped with dark brown-purple, by a lower sepal, white with green veins, and by ribbon-like, pendulous petals furnished with short hairs and five or six inches long. They are twisted, yellow at the base, and dull, reddish purple along most of their length, with the exception of the apex, which is purple. The buff-yellow lip is faintly streaked with brown.

This species grows in one of the hottest regions of the world in the full blaze of a tropical sun and exposed to the force of tropical storms. It is therefore interesting to find that it adapts itself to cultivation, and that it will flourish when transferred to a city greenhouse, like the one in which Mr. Arnold grows his collection and which contains several fine specimens of rare plants, and which is instructive and interesting as showing what can be accomplished in a comparatively small greenhouse in which it is impossible to give to each plant the peculiar conditions of heat and light which are supposed essential to its welfare. The fact that a plant which theoretically ought to be as difficult to cultivate as *Cypripedium Philippinense* flourishes in conditions which seem equally favorable to a number of other plants which grow naturally under very dissimilar climatic conditions, and which are usually considered difficult to manage, shows very conclusively that the cultivation of Orchids is not such a delicate matter as many persons suppose, and that any one with a moderate sized greenhouse can grow successfully a large variety of the very best of them.

Mr. Arnold will, we trust, pardon us for thus calling attention to his greenhouse and its contents. Our excuse for doing so is our desire to point out that there are a great many people living in cities who are fond of flowers and have the means for gratifying their love for them who can with the aid of a small glass structure placed on one of the outbuildings of their dwellings gratify their tastes by cultivating many interesting plants. There certainly can be no more delightful adjunct to a city mansion than a small greenhouse or conservatory, and the pleasure it is capable of affording will increase in proportion as the owner himself understands his plants and studies their requirements.

Foreign Correspondence.

London Letter.

NYMPHÆAS are especially attractive now at Kew. A circular tank thirty-six feet in diameter is filled with the leaves and flowers of a large number of kinds. Best of all is *N. Zanzibarensis*, one of the Stellata section, but much superior to any other in the group. Its flowers are ten inches in diameter, and are in the form of huge cups colored deep purple-blue, the base shaded with crimson and the centre occupied with golden anthers. It is about five years since this plant made its début at Kew, but its full dimensions have never been seen in England before this year, the enormous size of the flowers being the result of allowing the plant a bed of rich soil three feet across by two feet deep, instead of growing it in a large pot as hitherto. Almost as striking in size and color is the beautiful yellow-flowered *N. tuberosa flavescens*, its blooms as large, as fragrant and charming in color as the most perfect of Maréchal Neil Roses. *N. Lotus*, var. *rubra*, with huge flowers colored rose-crimson, and *N. dentata* (white), *N. Ortgiesiana* (pink), *N. albo-pygmæa* (white), and the various forms of *N. stellata*, from pure white to blue, are all flowering freely, and in the morning at about eleven o'clock they form a magnificent picture. An aquarium well stocked with the best aquatic plants is about as charming as anything in the way of in-door gardening. At any rate, the Water Lily house at Kew is an exceptional attraction to visitors during the summer.

The Azalea garden at Kew is one of its most delightful features during the month of June, when the plants are in bloom.

A large open space, surrounded by magnificent trees, in groups or isolated, with long vistas terminating in views of the lake or of some handsome building, and carpeted with the softest of lawns, is filled with large specimen Azaleas, whose prototypes are wild in your country, but whose colors and fragrance are beyond description. This year the display has been grander than ever. The wisdom of clearing away some large trees which overshadowed the Azaleas, re-forming the beds and replanting the specimens in good soil is now showing itself in a wealth of bloom and intensity of color unequaled by anything else in the garden either in-doors or out. I am told that even in America these Azaleas do not meet with the appreciation which, as seen at Kew, they abundantly merit. Compared with them the garden Rhododendron is stiff and gaudy, whilst in fragrance they are only equaled by our native Honeysuckle. We are immensely proud of our garden of American Azaleas. Amongst them are specimen trees of Magnolias such as *M. Umbrella*, *M. auriculata*, *M. Soulangeana*, *M. conspicua* and *M. cordata*. Some of these are in flower now or are just over. Mr. Gumbleton, of Cork, informs me that *M. Campbelli*, the Himalayan species with enormous flowers colored rich crimson on the outside, would certainly be hardy at Kew. It is one of the grandest of the genus, but hitherto it has been grown under glass in England,

Fig 43.—Cypripedium Philippinense.—See page 308.

although in the south of Ireland there are magnificent specimens in the open air.

Musa Japonica is the name given to a plant which Messrs. Veitch & Sons introduced about ten years ago from Japan, and which has proved capable of out-door cultivation in their nursery at Coombe Wood. A plant of it at Kew, in the winter garden, is now in flower. It is of more than ordinary interest, as it appears to be the *M. Basjoo* of Japanese authors, of which hitherto very little was known. It has a stem ten feet high, leaves as long, a stout, drooping inflorescence, the most conspicuous character in which is the large size of the oval-concave bracts and their tawny brown color. A Musa, which has all the striking appearance of *M. sapientum* and which may be grown in a temperature as low as that of an ordinary situation in the south of England, is likely to prove of value horticulturally. The only Musas that are ever planted out-of-doors in England are *M. superba*, and its ally, *M. Ensete*, but these are too tender to bear a temperature approaching frost, and must, therefore, be taken in-doors during winter. A second Musa, likely to bear a lower temperature than many of the species, is grown at Kew as an unnamed species indigenous in Hong-Kong. Both these Musas form suckers freely, and, in positions suitable to them, they would soon form a large cluster of handsome foliage.

An exhibition of plants organized by the Royal Horticultural Society, and held last week in the Temple Gardens, adjoining the Strand, was remarkable in many ways. Hitherto the exceptional efforts of this Society to get together a big display of plants, and to induce a big crowd to go and see them, have been spoilt by bad weather or some other circumstance beyond control. This time, however, the weather and everything else appeared to smile on the Society, the result being one of the most successful gatherings of plants and people ever seen in London. A peculiarity of the exhibition was the total absence of money prizes—the awards being only cups or medals. It was feared by many that this new departure would prove a mistake. Instead, however, of its effect being a thin show it was, on the contrary, an unusually full one. The nurserymen did wonders, both in respect to number and quality of their exhibits and in the skillful cultivation they displayed. The power and numbers of the nurserymen of England were very strongly revealed in this show. A few, who must be set down as short-sighted, disparaged the exhibition on this account, arguing that it was from purely commercial motives that the nurseryman exhibited. Probably that is true, but the motive of the private gardener or amateur exhibitor who craves for money prizes cannot be much less selfish than that of the nurserymen.

The chief features of the show were the collections of Orchids, Clematis, Rhododendrons, Filmy and other Ferns, hardy herbaceous plants, flowers and fruits. It would be impossible to mention here a tithe of the interesting things shown; indeed, almost every plant of the thousands there had something special to commend it. H. R. H. the Prince of Wales opened the exhibition and spent a considerable time in inspecting the plants and flowers. He afterward expressed his unqualified delight with all he saw. Those who sympathize with the Society in its efforts to win back the influence for good that it possessed some years ago will know how to appreciate the work of the present Council.

Mr. Bull's annual exhibition of Orchids has become an institution in London. Mr. Bull was, I believe, the first to devote a portion of his nursery to an artistic arrangement of Orchids and foliage plants on the same lines as govern ordinary plant-shows. All regular customers and persons interested are invited by card to inspect the show, which continues two or three months in summer. The ordinary time-killer is excluded by a charge for admission, an arrangement found necessary to prevent the houses from being filled with idlers and those people who rush to see anything and everything. The collection of Orchids in Mr. Bull's nursery is one of the richest in England. There are, also, many rare and beautiful Palms, Aroids, Ferns, Bromeliads, etc., to be found in his establishment. With the aid of these Mr. Bull is enabled to make a most attractive display of flowers and foliage. It is, of course, a trade advertisement simply, but it is a most charming picture, nevertheless, for those who are interested in plants, and who find pleasure in looking at a well grown specimen of a beautiful plant, whether in a nursery or in a private garden.

London. *W. Watson.*

Cultural Department.

Notes on Shrubs.

THERE are no hardy Viburnums which possess more beautiful or interesting flowers than the native Cranberry-tree (*V. Opulus*), also indigenous to Europe and the northern part of Asia. Specimens in the Arboretum raised from seed collected in the mountains about Pekin, China, do not show any sufficiently marked variations from our own to entitle them to a separate specific or varietal name.

The large, sterile, marginal flowers in the flat cymes become conspicuously white a few days before the perfect flowers open, which, in ordinary situations in gardens, occurs here about the 1st of June. It is always remarked that the natural species seems much less liable to attack by Aphides than the Snowball or Guelder Rose, which is but a monstrous form of the Cranberry-tree. This susceptibility to injury may be because the sterile Snowball, being perpetually propagated by cuttings, layers or similar modes of division, is less robust and less able to overcome attacks by insects than the fruit-bearing type, which is generally renewed by seed. Where Snowball-bushes are much infested by Aphides the thorough application of kerosene emulsion or a strong decoction of Tobacco will be effectual in destroying them. But it is very important that the insecticide should be sprayed upon the under side of the leaves with considerable force, so that it will penetrate into the folds of the twisted leaves, where the insects are concealed and the work of injury is carried on.

The Japanese Snowball (*V. plicatum*) is to be recommended for its freedom from disfigurement by these troublesome insects; but aside from this quality, it is valuable for its own peculiar beauty. The common Snowball is a more graceful, freer growing plant, which bears its balls of flowers on somewhat pendulous branches, while *V. plicatum* is a rather formal

shrub, bearing its blossoms on short, rigid, lateral twigs. The rough dark green leaves harmonize with the stiff character of the plant and form a beautiful, though scanty, setting for the profusion of snow-white flowers usually produced. These are arranged in more compact and more evenly round "balls" than those of the common species, and they seem of a purer white color. The character of the two species is so different that they should both be grown if possible, but in a small garden, where there is only room for one, *V. plicatum* would generally give the most pleasure. It should be stated, however, that *V. plicatum* is not so stubbornly hardy as the common Snowball, although it thrives very well in good well drained soil in the latitude of Boston. Both species blossom at the same time, but the Japanese Snowball retains its beauty the longest.

Far larger and more handsome than the flowers of either of the preceding species are the large Hydrangea-like clusters borne by *Viburnum macrocephalum*, a form of a Chinese species of long cultivation in Europe, but whose wild type, with a very few sterile outer flowers, has only recently become known to botanists. The individual flowers of the sterile form are very large, and the clusters or "balls" so great and weighty as to hang like a burden on the plant. This is not so hardy as either of the preceding species, but it can be grown in the climate of Boston.

Of all Viburnums in the Arboretum, the native Hobblebush (*V. lantanoides*), which was figured on p. 535 of the first volume of Garden and Forest, is the earliest to flower, the blossoms expanding during the first days of May. A week or ten days later the earliest flowers of the European Wayfaring-tree (*V. Lantana*) open, and about May 20th the Black Haw (*V. prunifolium*) comes into blossom with large, flat, compound cymes of small whitish flowers. The last species is not very hardy about Boston, yet in a very favorable location it will become a small tree. It is as pleasing on account of its bright shining green leaves as for its flowers, which are of short duration and closely imitated in effect by those of the Sweet Viburnum or Sheep-berry (*V. Lentago*), a larger growing, perfectly hardy, well known native plant, which comes into blossom a few days later.

Viburnum cotinifolium, a shrubby Himalayan species, comes into blossom during the latter part of May. The leaves of this are soft and downy and have a resemblance to those of *V. Lantana*, but the flowers differ in being arranged in a smaller, much more convex cyme. The small corollas are of a delicate pinkish white color and have an appearance suggestive of dainty porcelain. The anthers just before shedding pollen are conspicuously large and yellow. The plants at the Arboretum need a good deal of protection in winter, but they are fairly hardy in more favorable conditions. *Viburnum Sieboldi* (sometimes *V. Japonicum* in nurserymen's catalogues) is a coarse growing Japanese species which blossoms at the end of May or in early June. The small white flowers in large, flat, rather loose cymes look much like those of Elderberry. The leaves are large, thick and rough, and when bruised they emit an odor quite disagreeable to most people. Fruit is produced sparingly here, but strong, vigorous plants are procured by grafting on stock of the Arrow-wood (*V. dentatum*), a common native species which does not begin to bloom until the middle of June. *V. pubescens*, another native species, is earlier and loses its flowers by the time those of the Arrow-wood open. As ornamental plants in a shrubbery both of these species are superior to *V. Sieboldi*, which may be called more peculiar than beautiful.

The Withe-rods (*V. nudum* and *V. cassinoides*) are so closely alike as to be identical so far as their horticultural value is concerned. They are perfectly hardy native plants of great use in shrubberies and for covering waste places. They bloom with the equally useful but more graceful and pretty *V. acerifolium* near the middle of June. The last species of Viburnum to blossom is *V. molle*, a plant of generally southern habitat, but which is also found on Nantucket Island, the mildest spot in Massachusetts. It is quite hardy. In foliage, flower and general appearance it closely resembles *V. dentatum*, which under the influence of the cool breezes of Cape Ann, only an hour's railroad ride to the north of Boston, blooms a couple of weeks later than it does near this city.

Arnold Arboretum. *J. G. J.*

Some American Plants.

Aristolochia tomentosa is a twining and climbing perennial of the same genus as the Pipe-vine or Dutchman's-pipe (*A. Sipho*), and resembles it in many ways. The flowers of *A. Sipho* are larger and a little more showy, but are of about the same shape. The most striking difference is in the size of the leaf. In *A. tomentosa* they are about five inches long by four broad and somewhat downy. But in the other, though of almost the same shape and shade of green, they are often a foot long by eight inches wide. These large green leaves are so numerous in both plants as to hide both flowers and stems. Both are natives of rich woods in the northern portion of the southern states. They seem to thrive in light or in heavy soils in the sun or shade, and are quite hardy in this latitude.

Adlumia cirrhosa (the Climbing Fumitory) is a delicate climbing biennial, not rare in moist or wet woods. Its foliage and flowers are both very neat, and it is a pity that it is not perennial. When near a bush or something to which it can attach itself it often attains several feet in height, and its drooping panicles of light purple flowers are continuous from June until October. It needs a light soil, and thrives in both sun and shade.

Zygadeus venenosus, from the Pacific coast, has a bulbous root and long grass-like leaves. Its flowering stem is usually a foot or more high, almost naked, and bears at the summit a dense short panicle or head of nearly white flowers a third of an inch wide, and having a yellowish centre. It is perfectly hardy in this climate, and will do well in light or heavy soil in the sun.

Oxalis violacea, the Violet Wood-Sorrel, is one of our prettiest wild flowers at this season. It is sometimes found in southern New England, but is more common southward and westward. It generally grows about six inches high, bearing several large violet flowers nearly an inch wide, which are very showy. It can easily be grown in the shade or in a cool partly shaded situation. A light soil suits it, and if it is to be set in a heavy one peat or leaf-mould should be added.

Brodiæa multiflora and *B. coccinea*, both from the Pacific coast, come into flower at about the same time. Both have bulbous roots about the same size, with long naked stems and grass-like leaves from the bulb. Their stems are each about a foot and a half high, with their flowers in an umbel at the summit. They are often found growing together, and the bulbs are so near alike that collectors frequently get them mixed if taken up when not in flower. But though resembling each other in these points, they are very unlike when in flower. In *B. multiflora* the flowers are upright, half an inch wide, three-fourths of an inch long, and bluish purple in color, borne in a close round umbel and on very short pedicels. The flowers of *B. coccinea*, on the other hand, are drooping, on stems from half an inch to an inch and a quarter long. The flowers themselves are usually an inch or more in length, tubular in shape, and about a third of an inch thick. In color they are deep scarlet for nearly the whole length, or except a short space at the mouth, which is green and white. This last is a very striking plant and valuable for cut flowers. We have the best success with both of these and most other Californian bulbs by setting in autumn and protecting with a covering of leaves. When wintered in a cellar they are inclined to start into growth about the last of February, and this early growth in the cellar weakens the bulbs. They like a fine, well-drained soil and open sunlight.

Brodiæa stellaris is a little, dwarfish species, only four or five inches high, bearing a small umbel of four to six pale blue flowers, with darker stripes. The flowers are a little more than half an inch wide. It is a pretty species, but its stems are too short for cutting.

Brodiæa lactæa has almost white flowers, with greenish stripes. The flowers are half an inch wide, in an ample umbel on a naked stem a foot and a half high. Both of these last mentioned should be treated in cultivation like *B. coccinea*.

Tradescantia Virginica, the common Spiderwort, which has been long in cultivation, is a native of moist woods from western New York southward and westward. It is a strong-growing plant, and soon forms dense clumps fifteen to twenty inches high. The flowers are blue, an inch or more wide, with large yellow stamens, which contrast finely with the blue background of the flower. It is easy of culture and is a valuable plant for a shady corner.

Lilium Bolanderi is a rare species from Oregon, growing from six to twelve inches high, with dark red flowers, having darker spots inside. The flower is a little more than an inch long and about as wide. All the specimens I have seen produced only one terminal flower, and the stem is recurved so that the flower is turned downward. It is one of the smallest species and quite pretty. A light loamy soil seems to suit it best.

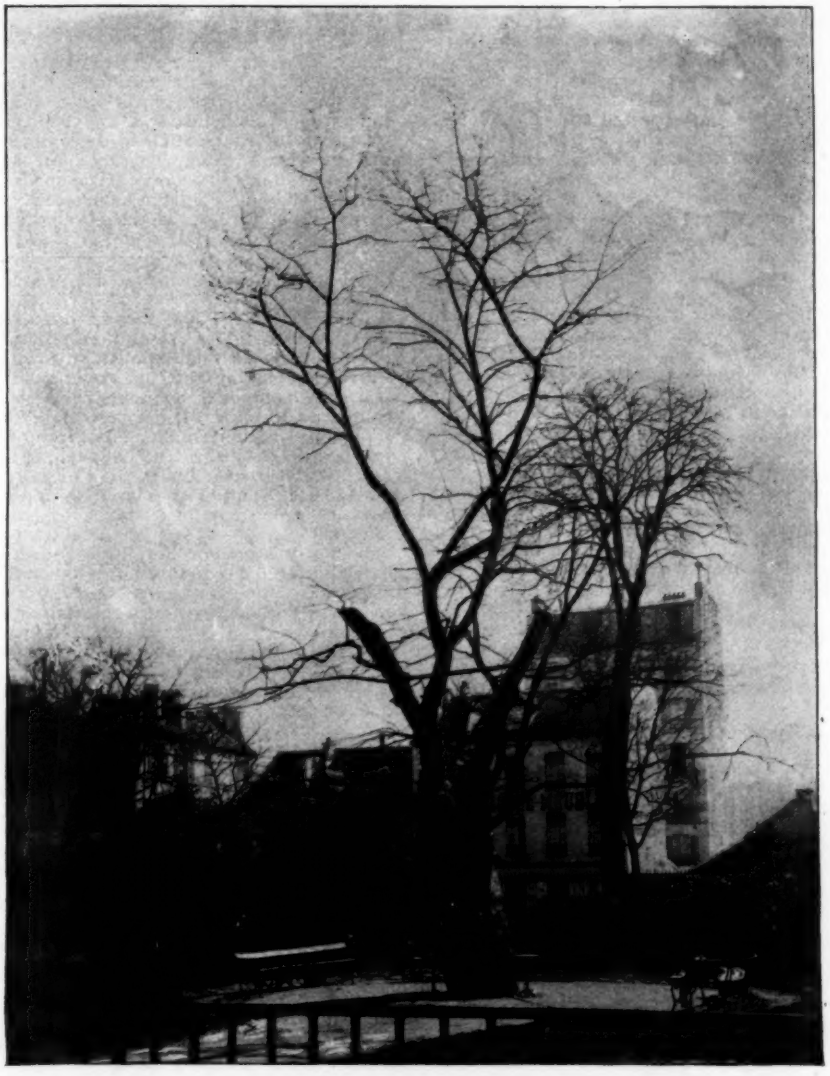
Allium acuminatum, from the Pacific coast, is usually a low plant, six to eight inches high, with a good-sized umbel of pretty rose-purple flowers. The flowers are half an inch long and about as wide at the opening, on pedicels three-fourths of an inch in length.

Callirrhoë involucrata, the Crimson Callirrhoë, a plant from the sandy plains of Texas, is beginning to bloom. The flowers are sometimes two inches wide and a dark crimson in color. It is a prostrate, spreading perennial, with stems sometimes two feet long. But these long stems, though creeping on the ground, do not themselves take root. The flowers, which are on upright naked stems from four to eight inches long, continue to come all summer. It is perfectly hardy, will do well in light or heavy soil, and is certainly one of our most interesting native plants.

Sedum Nevii is a native of the southern Alleghanies. Its dense leafy stems are usually only two or three inches high, very even, and form a solid mass of light green foliage, which is very pretty. Its flowering-stem is not so leafy, and rises two or three inches above the rest of the plant, bearing a small three-spiked cyme of white flowers, which much resemble those of *S. ternatum*, but it is fully two weeks later. It is a prettier plant than *S. ternatum*, and can be grown without protection in sun or shade. We have never tried it in a heavy soil.

Dioscorea villosa, the Wild Yam-root, is a twining and climbing herbaceous perennial. Its large handsome leaves are often five inches long by three and a half inches wide, prominently several ribbed, and downy underneath. The flowers are not showy, but the drooping racemes of three-angled pods are very interesting. It is a striking plant, admired by all who are interested in this class, and for shady or half shaded situations is invaluable. It is dicœcious, and the female plants should be the most valuable on account of the fruit. It is occasionally found in thickets from New England to the Mississippi River, and is more common southward. It needs time to become established, and plants two years old or more have larger and handsomer leaves and fruit.

Southwick, Mass. *F. H. Horsford.*



The Oldest Locust-tree in Europe.—See page 305.

A Few Good Forms of Ficus.

THIS extensive and varied genus contains many species that are both useful and beautiful. It not only includes the common Fig (*Ficus Carica*) and the wonderful Banyan-tree (*F. Indica*), but also a number of our most serviceable stove and greenhouse plants. It is almost needless to call attention to the best known species, *Ficus elastica*, its merits as a generally useful decorative plant being so well understood and recognized, and the variegated form of this species has also been commended by various correspondents of GARDEN AND FOREST. Without doubt *Ficus elastica variegata* will take rank among standard decorative plants as soon as the stock becomes so abundant that well grown plants may be procured at a reasonable price.

Another very handsome variegated species is *F. Parcellii*, which has dark green leaves, beautifully marbled and blotched with pure white. It is a plant of good habit and free growth, and quite naturally attracted much attention when first introduced from the South Sea Islands several years ago. This species should have a warm house temperature and a moist

atmosphere, because when allowed to become too dry it is liable to injury from red spider. Among the large-leaved species, *F. macrophylla*, the Moreton Bay Fig is prominent, its large cordate leaves giving quite a tropical effect in the conservatory, and also being very effective for out-door decoration in the summer. It is a strong grower, and soon makes a large specimen.

Ficus dealbata is another notably good large-growing species, and has leaves of somewhat similar shape to those of *F. elastica*, but dark green on the upper side, while the under surface is thickly clothed with pure white tomentum. It was introduced from South America a number of years since, but has not become very common, possibly because it does not root as readily as some other species.

Ficus Porteana also deserves a place among fine foliage plants, having oblong, sharp-pointed leaves from one foot to eighteen inches in length and from four to five inches in breadth, and slightly serrate on the margins. The leaves of this species are not quite so tough and strong as those of *F. elastica*, but they have substance enough to render it very useful for conservatory work. It is a native of the Philippine Islands, and produces its finest foliage when grown in a warm house.

In the scandent section of the Fig family are to be found some of the most useful greenhouse climbers, prominent among which are *F. barbata* and *F. stipulata* (*F. repens*), the first named being much the stronger of the two, and producing dark green, cordate leaves about three inches in length, and more or less clothed with brown hairs. This species, like *F. stipulata*, is especially useful for covering a wall in a warm house, as it adheres very firmly, and, when given congenial treatment, soon covers such a locality with a most pleasing green mantle. *F. stipulata*, and its variety, Minima, are not so particular as to locality and treatment, and may be put to a variety of uses besides that referred to above, being readily propagated and of rapid growth.

The various kinds of Ficus, in general, are very clean plants and not subject to the attacks of insects, unless much neglected. They are propagated by means of cuttings made from firm wood, many of the sorts rooting best from single eye-cuttings, which should be firmly planted in small pots and tied up to a small stake, so as to prevent them from falling out of the pot on account of the weight of the leaf.

And while they root best in a close frame, yet enough ventilation must be given at night to prevent the accumulation of much moisture on the cuttings, else they are liable to damp off. Sandy loam, slightly enriched with old manure, will be found a satisfactory compost, and with reasonable care handsome plants may soon be obtained.

Holmesburg, Pa. *W. H. Taplin.*

Crown and Root-Grafts.

I AM glad to see this distinction clearly made by Professor Bailey and others at the Nurserymen's Meeting. Any one who grows his Apple-seedlings for grafting, and grows them well, knows that they will be too long to be used entire, so that the claim often made that trees are grown on "whole roots" is misleading. The roots must be shortened and side-roots removed. The question then remains, whether we shall use any more of each root than the crown section? I have been testing the matter for many years, and carefully noting results. There are elements of great uncertainty in these tests, unless much care is used and sufficient time allowed for observation. Even if the crown is best, crown-cuts are not all equally good; cions are not all equally good; the soil is not always uniform, and other disturbing conditions are possible.

My experience with Apple-seedlings has been that if plump, vigorous seed is used, and properly planted in good and suitable soil, yearling roots are better than older ones. We then have yearling wood in the stock joined to yearling wood in the cion; the size of the stocks is more nearly that of the cions, often allowing the bark to join all around, and the wood of the stock is softer and more easily cut. Two-year stocks are either too large or of inferior growth and quality.

In our climate it has been found a wise plan to plant our grafts deeply, so that but one bud of the cion is above ground—using cions of three buds or more. In this way, from many varieties we can get good roots from above the point of union. When sufficient care is taken in all points I have never seen any marked difference in growth, in nursery or in orchard, between the first and second cuts of well grown and carefully selected roots which could be charged positively to the roots. It must be remembered that we are apt, while at work, to put the larger cions on the top cut, leaving the smaller for the second cut, so that the completed grafts of the latter are somewhat less in size. But, even allowing all that is required here, I am not able to say that alternate rows of first and second cut grafts have ever, in my nursery, shown sufficient difference at the end of the third season to be discriminated with any certainty. So I must conclude that, with good work all around, it is allowable to use the second cut. But with careless work and unsatisfactory material the result might not be the same.

As to the preference for budding over root-grafting, I find many buyers who object to the crook in a budded tree and prefer the straighter root-graft. But aside from this, where iron-clads are demanded, we want none of the stock above ground or near the surface, as must be the case with budded trees.

I can see no reason why trees root-grafted should have roots on one side only. It may happen that an occasional tree will show that peculiarity, but when this occurs so very seldom who can be sure of the cause? I should be most apt to regard it as a peculiarity of the seedling stock. Neither have I noted that the roots of root-grafts are more pronged. Observing nurserymen soon discover that nearly every variety has its own style of root, which is determined by the cion, so that many varieties can, when taken up at three years old, be known by their roots alone. The spadesmen notice this very quickly when digging, and have a ready anathema for certain varieties with a vigorous, deep-going root system.

Newport, Vt. *T. H. Hoskins.*

Notes About Blackberries.

KITTATINNY I had thrown out as too tender, although when I did get a good crop it was a very excellent and paying berry. But it did not stay thrown out, so I have adopted the plan of bending the canes over and holding them down in winter with stones or boards. The result is excellent crops on a small scale. The fruit is large and glossy, and good if well ripened. But there must be some of the caution used that was needful in the case of Lawton. It must be well ripened before being picked.

Wachmett Thornless is not thornless, and is not a berry with a single point in its favor for general planting. There may be localities where it is valuable.

Wilson Junior is only an improved Wilson, and very tender indeed. It will come through if covered with snow; but even if bent down and held close to the ground it will kill to the roots during open winters. It is worthless in a northern latitude.

New Rochelle or Lawton is also worthless, except south of New York. Dealers have a habit of calling all improved Blackberries Lawtons. We cannot as yet get any rational distinctions made in this regard.

Taylor is a real acquisition. The size is above medium and the quality very good. The growth is strong and it is among the most productive. It is later than Snyder.

Snyder is a much better and larger berry than was supposed for a long time. Cut the canes back and select a cool, strong soil and it is a prize. On poor soil and where easily affected by dry weather it is too small to be of any value. In quality Snyder is really very good, not sour and not sweet.

Early Cluster and Crystal White, with me, are tender and otherwise valueless.

Erie I hold in the very highest esteem. It has gone through three winters unharmed, and gives a superb crop of very large and very excellent fruit. The color is a peculiar jet black, unlike that of Lawton, with which it has sometimes been confused. I believe a large amount of swindling has been done in sending out Lawton for Erie.

Minnewaski, so far as I have tested it, proves to have all the good qualities claimed for it—a large, handsome and early berry, and a cane not so strong as some, but entirely hardy.

Agawam is another excellent sort, not so large as Erie or Minnewaski, but with me an excellent fruit and a hardy cane. It bears grand crops, and no one is ever cheated by it into biting an acrid berry that he cannot swallow with honest regard for his stomach.

I would select as a list for a home garden Erie, Agawam, Taylor, Minnewaski. Confined to two sorts, I should perhaps take Erie and Agawam; but should not like to miss Taylor.

For market the same list might still hold good, with Snyder added. The Blackberry has been improved far more than is generally known. The Kittatinny caused great disappointment, and led many growers to discard Blackberries entirely from their grounds.

I grow with cultivation for two or three years, but let the plants ultimately take possession of the soil and care for themselves. They do best let alone. Cut out the dead canes, and

cut back the new ones. Weeds and grass will not hold their own with Blackberries in good soil.

The Lucretia Dewberry has been advertised well, and is really a superb fruit; but it must be laid down for winter. The fruit is enormously large, very early and excellent. It can only be grown well by being tied to stakes and bent back to about three feet of iron.

There are two drawbacks to Blackberry culture which seriously mar our pleasure and profit. The first difficulty is with the cruel thorns. Women cannot gather the fruit without having their clothes torn to rags. The rust is another serious trouble. The remedy for this fungus is to cut and burn. I should not try to cultivate any sort that rusted to any extent. With me Kittatinny alone is diseased, and that rarely. This rust is a mischievous malady, and it is not advisable to propagate it. It is not confined to the Blackberry.

The kind of soil for the Blackberry is invariably dry, well drained, strong clay, if possible; but well drained it must be. If I intended to cultivate a plantation I should have the rows ten feet apart and a row of Potatoes between.

Clinton, N. Y. *E. P. Powell.*

New Orchids.—A plant of more than ordinary interest is *Odontoglossum hybridum Leroyanum*, the first hybrid Odontoglossum raised artificially. Its parents are *O. crispum* and *O. luteo-purpureum*, which were crossed about five years ago by M. Leroy, gardener to Baron E. de Rothschild, in his garden at Amandvilliers, near Paris. The hybrid flowered in May this year, and proves its origin by combining the characters of the two species named. Mr. Sander will shortly publish a figure of it in *Reichenbachia*. Many have obtained seeds, and even seedling Odontoglossums, by crossing one species with another, but they have never come to anything.

Odontoglossum Bleui splendens is another hybrid, its parents being *O. vexillarium* and *O. Roezlii*. Properly, however, the three should be called Miltonias. This hybrid also originated in Paris, where it was raised by M. Bleu. Its flowers are as large as those of an ordinary *O. vexillarium*, white, tinted with rose, with a crimson blotch at the base of the labellum, and radiating lines of the same color extending a little out toward the margin. It is a curiosity as a true hybrid Miltonia, otherwise it is scarcely equal to a good variety of either of its parents. It is in the collection of Mr. F. Sander.

Phajus Henryi appears to be merely a rose colored variety of *P. Humblotii*. Probably the two are the extreme color variations of one variable species. Plants of both were shown in flower by Mr. Sander at the Temple Show. *P. Humblotii* is likely to prove a good garden Orchid, as it grows freely and flowers well.

Kew. *W.*

Sagittaria Chinensis was received from a Chinese laundryman early in the year as an egg-shaped, whitish tuber with a short sprout. It was planted in a bowl of earth and kept saturated with water, and proved a very rapid grower and attractive plant a foot high, with light green foliage and the many arrow head leaves rather broad. Removal to an outside tank has checked its growth and flowering so that it is not possible to say whether or not it is *S. Latifolius*, the only Chinese species which can be found in catalogues. Special interest was excited in this plant from a hope of discovering that our Chinese friends, with their materialistic reputation, were not without some of that sentiment which has led emigrants in all ages to take with them some favorite plants as a reminder of their birthplace. We are already indebted to them for the Water Narcissus or "Sacred Water Lily," apparently first brought here without hope of gain, and it seemed as if the Sagittaria might be an introduction of another favorite home plant. This theory I regret not being able to verify, as my interviews with growers of the plant in the Chinese colony simply proved that they grow the plant, but with no great enthusiasm, such as they evidently feel about the "Sacred Lily." A Chinaman is not usually an open hearted enthusiast, but I found a number of them in humble quarters become bright-eyed and vivacious over the Narcissus. Lately the street fakirs have offered dormant tubers Sagittaria, but of what variety is unknown to me.

Tulipa ciliatula.—This is the name I find given by Mr. J. G. Baker to a new Tulip which he describes in the *Gardeners' Chronicle* for May 24th. I received it directly from Mr. Whitall, who collected it on the Anti-Taurus Range in Asia Minor, and sent it out last year. With me it came into bloom in the open border in April. It is nearly allied to *T. Gesneriana*, with the same bright crimson-scarlet petals, and glaucous, undulated foliage. It is of very dwarf habit, the peduncles being only two inches long, and is an excellent plant for bright bedding or for the rockery.

Œnothera Fraseri is one of the best of the Evening Primroses, The flowers are light golden yellow, borne profusely on a dwarf plant a foot high, which remains in bloom for several months. It is a native plant long in cultivation. The fields are now bright with *Œnothera biennis* and Dog Roses, and it may be noted that for a bright bouquet there are few more pleasing combinations than these two flowers, loosely arranged.

Iris lævigata opened its first bloom on the 15th of June, on the borders of the pond, where they seem to be about a fortnight earlier than in a dry and somewhat shaded border. There are handsomer flowers among the Irises than Kæmpfer's, but these have a quaintness and a grace of their own. The varieties with dark reticulations are specially quaint, and good white forms are very pleasing. It is interesting to grow this plant from seed, as it comes into bloom in two and three years.

Elizabeth, N. J. *G.*

A Good "Cutting" Lettuce.—The French works on gardening describe a class of so-called "cutting Lettuces," of which a distinguishing characteristic is that if the leaves are plucked from the plant one by one others will develop to take their places, and thus a single planting will continue to furnish a crop of leaves through nearly the whole season. I have tested these Lettuces and found none of them to be of the finest quality, all being too bitter to suit our American taste. It may not be generally known, however, that some of our best common Lettuces, when given good soil and culture, will furnish several successive crops of foliage without running to seed, if the leaves are picked off one at a time, and are not drawn upon too largely. I have grown the Prize Head Lettuce in this way during the past two seasons with excellent results. A bed covering a few square feet furnishes sufficient lettuce for daily use during several successive weeks.

University of Wisconsin. *E. S. Goff.*

Correspondence.

Appropriate Bridges.

To the Editor of GARDEN AND FOREST:

Sir.—You can do no better work, I think, by means of the charming illustrations you publish, than to continue to show American readers what good rural bridges should look like. There is a growing desire in this country to build substantial bridges and to make them beautiful as well as solid. But often there seems no realization of the fact that beauty means appropriateness, or, at least, no true feeling for what is appropriate and inappropriate. For example, while passing through Connecticut by rail the other day, I noticed in one of the smaller towns (was it in Milford?) a small stone bridge, spanning a stream close to the railroad, which seemed to have been recently built. Although neither long nor high and placed in a modern town of modest aspect, where most of the neighboring buildings were of wood, this bridge has crenellated sides, and, at one end, a circular turret, whose top, as I remember, was similarly protected against impossible enemies. In itself it was not beautiful, looking sadly like the *papier-maché* fortifications of the scene-painter. And could anything more inappropriate be imagined in a New England town of to-day than a battlemented bridge, suggesting the conditions under which people lived in other lands in mediæval times? Of course, the cost of such a structure must have been much greater than that of a simpler stone bridge, and every penny of the difference had been worse than wasted, producing a thing which was not beautiful in itself, and which looked still less so by contrast with its surroundings.

Philadelphia. *Viator.*

The Paragon Chestnut and The Crandall Currant.

To the Editor of GARDEN AND FOREST:

Sir.—Referring to your report of the Nurserymen's Convention, page 292, allow me to enquire (1) whether the Paragon Chestnut was not propagated from grafts furnished by my late neighbor, Mr. W. L. Shaffer.

Mr. Shaffer's tree was from a Spanish Chestnut.

(2) Again, what is the difference between the Crandall Currant and the Utah Black and Utah Yellow Missouri Currants, which have been under cultivation for twenty-five years, and were originally distributed by Siler, Reading and others?

Germantown. *Thomas Meehan.*

[1. Perhaps Mr. Van Deman was incorrectly quoted as saying that the Paragon Chestnut is of "purely native origin."

In the Report of the Secretary of Agriculture, just issued, he says: "It is possible that this variety may have some foreign stock in it, as the leaves differ slightly from those of our native species." Mr. Engle received the grafts from Mr. Shaffer under the name of Great American, and he changed it to Paragon because he feared the first might be misleading. He knew nothing of its origin, but supposed it might be a cross between our native Chestnut and some foreign variety, since the flavor is nearly equal to that of our own Chestnuts, while the nut is as large as the foreign sorts. We should be glad to have further information as to the parent tree. A good illustration of the nut appears in the report of Mr. Van Deman.

(2) Professor Bailey, who has recommended the Crandall Currant highly, is not acquainted with the Utah Currants spoken of, although he has heard of them. Mr. A. S. Fuller commends these Utah forms in his "Small Fruit Culturist;" but he is unacquainted with the Crandall. We should be obliged for a report on the comparative value of the Crandall and these older introductions from any one who has tried both.—Ed.]

The American Association of Nurserymen.

Fifteenth Annual Meeting.—III.

THE papers which follow conclude our report of the late Convention of Nurserymen in this city. The next Annual Meeting will be held either in Minneapolis or St. Paul, as may seem best to the Executive Committee.

THE CULTIVATION OF THE CHESTNUT.

Mr. Samuel C. Moon read the following paper on this subject:

Chestnut culture in orchards is a young industry in this country, and although it has already been proved to be profitable, the subject is as yet imperfectly understood. The Chestnut-tree is widely distributed throughout the country, and yet there are large districts in which it is not found, and the question is often asked whether it will grow on bottom lands or on limestone lands? I cannot reply to these questions, and would be glad if some experiment station would investigate this subject. In Arthur Bryant's book on forest-trees it is said that "the Chestnut seems to prefer the sides and neighborhood of hills and mountains with a dry sandy or gravelly soil, although it will grow on almost any soil except a wet one. It does not appear, however, to grow more rapidly in the rich soils than on the poorer lands. Lands utterly worthless for cultivation may be made to yield an income by planting them with Chestnuts."

No trees which are equally well adapted for avenues will yield any return like our native nut-bearing trees, and none are more appropriate for shade and ornament about buildings or along farm lanes or in pasture fields. In planting the Chestnut, whether in orchards or avenues, the trees should be set at least forty feet apart, and some varieties will need forty-five or fifty feet. Like other fruit-trees, they should be mulched, or the land should be kept mellow about them while they are small, and they will come into bearing as soon as Apple-trees or Pear-trees. Wild trees usually commence bearing when from twelve to twenty years old, and grafted ones of the most productive varieties from two to seven years after grafting. A Chestnut-orchard of the Numbo or Paragon varieties will come into bearing condition as soon as an orchard of Baldwin Apples. Both of these varieties possess the qualities which make any orchard-fruit profitable—that is, hardiness of the tree and early fruitfulness, with large size and fine appearance of fruit.

Efforts to introduce the Maron de Lyon and other large European varieties have not been successful, for although the trees may live a few years, they ultimately die. Trees imported from Europe, and trees grown here from imported seed, are not generally hardy; but stock raised from the seed of the exceptionally hardy European trees that do flourish here have proved hardy themselves, and in this way a strain of European Chestnuts has been secured which will endure the climate of the eastern states. Many individual native trees in different parts of the country have local reputation for superiority, and are no doubt worthy of dissemination, but they have never been introduced, and, like other new fruits, will need to be tested in different sections and under varied conditions before they can be confidently recommended. As the demand for new and improved varieties develops there is little doubt but that superior kinds will be found and disseminated.

In habit of growth the American Chestnut differs from the European about as the Sugar Maple differs from the Norway Maple. The foreign Chestnut branches low and forms a round-headed tree, while the native variety grows taller and more spreading. The Japan Chestnut seems to be smaller than either of the others, with smaller foliage, and its slender, compact habit makes it an acquisition for small plantations. None of the large Chestnuts, and no foreign Chestnut that I have seen, equals in flavor the small ones on our native trees when they are eaten uncooked. They lack the sweet and delicate taste with which we are familiar, and there is an astringency in the skin which covers the kernel, but boiling or roasting corrects this unpleasantness, and after being cooked there is little difference in the taste of the foreign varieties and our own. When the culinary uses of Chestnuts are appreciated here as they are in Europe, where the cooks prepare them in a variety of ways, the demand for those of large size will rapidly increase.

I find the Chestnut an expensive tree to raise, and this cost of production is an obstacle in the way of its general cultivation. I have found difficulty in grafting the trees and loss in transplanting them. It has not paid to graft them until after they are once or twice transplanted and when the stocks are three, or, better yet, five years old. My most successful take of grafts yielded seventy-five per cent. of saleable trees, but I have more frequently had seventy-five per cent. of failure. I have tried taking up one year's seedlings and grafting at the collar as Apples are worked, on whole roots. I have tried collar-grafting of one-year-old seedlings as they stood in the nursery row, using ordinary tongue-grafts, but with no success. I have failed also entirely with ordinary budding. I have been most successful when I cut the cions early in spring and kept them dormant in an ice house until the stocks started and the buds on them were well swollen. My practice then is to cut off the tops and insert tongue grafts wrapped in waxed muslin in the ordinary way. In some cases the grafts do not unite well and there is no perfect union between stock and cion. Such trees, of course, are short lived and worthless. This defect is more common with some varieties than others. I have one valuable variety that I have never yet succeeded in grafting. Three years ago I headed in a large European Chestnut tree with fifty grafts of the Japanese variety and every one took and looked well. This year, however, I found the unions all imperfect and they will evidently soon decline.

The difficulty of successful transplanting seems to lie in the extreme sensitiveness of the roots to exposure and their slowness in re-establishing themselves in the soil. If the roots get at all dry the vitality of the tree is wasted by evaporation before they become sufficiently established to supply the demand upon them. I therefore dig and handle Chestnut-trees on damp and drizzling days and puddle the roots as soon as they are dug. These difficulties are annoying but I do not consider the obstacles insurmountable. What is needed is extra care in every part of the work of handling the trees, from the time the seeds are sown until the grafted trees are set in their permanent positions, and I believe that after intelligent effort and experiments have been made by a large number of practical nurserymen in this direction, means will be found by which the trees can be produced as rapidly and cheaply as they are needed.

In the discussion which followed it was explained by Mr. Fernow that the Chestnut is not so particular about the chemical composition of the soil as about its mechanical condition. Where the Chestnut does not thrive on limestone land it is because the solid rock not far below the surface obstructs drainage. In limestone lands where there is an open, permeable subsoil the Chestnut flourishes. The same causes sometimes exclude the tree from alluvial bottom lands. To attain the best growth it needs deep, free and open drainage.

HARDY PERENNIALS.

Mr. J. W. Manning, Jr., of Reading, Massachusetts, read a paper on the question whether it is desirable for nurserymen to include hardy herbaceous plants with the trees and shrubs to which their business in this country is generally confined. Mr. Manning replied by saying that a few years ago there was little to encourage nurserymen to cultivate this class of plants, but that a great change had taken place in the character of the material used for ornamental planting. Old-fashioned plants which gave abundant flowers from spring till autumn in a succession of bloom were again coming into favor. They had been for some years removed to the background, and their places had been occupied by stiff arrangements of bedding

plants. These plants were expensive to keep through the winter, and required great care, and produced, after all, an effect which covered but a few months in the year, leaving the spring and autumn garden bare and empty. The return to a more natural style has brought into prominence these hardy plants, many of which are quite as brilliant in foliage as the bedding plants which they are replacing. We are by no means confined, however, to plants which flourish in old-fashioned gardens, for an increased knowledge has brought into cultivation hundreds of beautiful plants from all the temperate and mountainous regions of the globe until there is abundant material for beautiful floral effects, from the earliest spring until freezing weather, to be had with these hardy herbaceous plants, and while an ample variety of foliage and flower can be secured to suit every soil and situation and individual taste, less care and expense is required to cultivate them than is needed with the artificial bedding system.

The use of these perennials is not confined to the flower border alone; many of them are adapted for use on edges of shrubberies and in half wild situations so that large parks and public gardens can hardly be treated with proper landscape effect without using them in great abundance. It would be hard to treat rocky ledges, or shady nooks, or swampy lands, or the banks of ponds or streams without them.

Nurserymen were advised to begin at first with those that are most easily cultivated and propagated, avoiding weedy kinds and including in the main such as are of medium size and a long flowering season and having abundant bloom. A few of the taller kinds are indispensable for large effects, and a few of the exceedingly dwarf kinds are equally indispensable where a low creeping growth is needed. As a whole, no class of plants is more easily multiplied, and the only propagating apparatus needed is that found in the ordinary nursery business. They take up little room, and a large variety can be cultivated on a small area, so that the filling of orders is easily accomplished, and the work of digging and packing is a small item.

Mr. Manning concluded with a list of the hardy plants which were in greatest demand, but we omit it, as we give so much attention to this class of plants from week to week.

Periodical Literature.

IN the fourth of his "Artist's Letters from Japan," published in the June number of the *Century Magazine*, Mr. La Farge speaks more particularly about architecture and gardening. His chief text is the temple of Iyémitsu, which, like the more pretentious one of his grandfather, Iyéyasu, stands on the sacred mountain of Nikko. The purely architectural descriptions, marked naturally by the keenest artistic feeling for effects of light and shadow as well as for form and color in themselves, do not here concern us as much as those which show how inevitable in the Japanese mind nature and art are treated as a single entity, and to produce beauty means to blend the work of man in the most subtile ways with the work of God. The temple in question, says Mr. La Farge, is "fitted into the shape of the mountain, like jewels into a setting. From near the red pagoda of Iyéyasu's grounds a wide avenue leads, all in shade, to an opening, narrowed up at its end to a wall and gate, which merely seems a natural entrance between the hills. There are great walls to the avenue which are embankments of the mountain, from which at intervals fountains splash into the torrents at each side, and overhead are the great trees and their thin vault of blue shade. The first gate is the usual roofed one, red, with gilded rafters and heavy black-bronze tiles, and with two red muscular giants in the niches at the sides. Its relative simplicity accentuates the loveliness of the first long court, which we enter on its narrowest side. Its borders seem natural, made of nothing but the steep mountain-sides, filled with varieties of leafage and the columns of the great Cedars. These indeterminate edges give it the look of a valley shut at each end by the gate we have passed and by another far off disguised by trees. This dell is paved in part and with hidden care laid out with smaller trees." A cascade falling from the hill fills a large stone tank and "the little pavilion over this well is the only building in the enclosure. . . As we turn to the highest side of the court on the left and ascend slowly steep, high steps to a gorgeous red gate above our heads, whose base we cannot see, the great Cedars of the opposite side are the real monuments, and the little water-tank upon which we now look down seems nothing but a little altar at the foot of the mountain forest. The gate, when we look back, is only a frame, and its upper step only a balcony from which to look at the high picture of trees in shadow and sunlight across the narrow dell, which we can only just feel beneath us. . . . Just behind the gate, as if it lead to nothing, rises again the wall of the mountain; then we turn at right angles toward a great esplanade, lost at its edges in trees, from which again the forest would be all the picture were it not that further back upon the hill rises a high wall with a platform and lofty steps, and the carved red and gold frame of a cloister with another still richer gate of red lacquer, whose suffering by time has made it more rosy, more flower-like." This is but the beginning of Mr. La Farge's description of this shrine and its enclosures, but it is enough to show how nature and art intermingle, interpenetrate each other under the hand of the Japanese artist. More and more this impression is strengthened as further steps are taken through the varied enclosure, until we reach "the distant steps leading through the trees to the tomb. . . . surrounded by the still more solitary splendor of the forest," its bronze and lacquer and golden carvings contrasting with wild rocks and trees, grasses and mosses, and, when the winter shall come, standing unprotected amid the snow and storms. Such a scene, as the writer says, brings a feeling of humility and of the nothingness of man." It is as if these tombs said, "serenely or splendidly, in color, and carving, and bronze, and gold: 'We are the end of the limits of human endeavor. Beyond us begins the other world, and we, indeed, shall surely pass away, but thou remainest, O Eternal Beauty.'"

With humbler buildings the effect is the same—their surroundings form part and parcel of the design and it is impossible to say where nature ends and art begins. "What is natural," says Mr. La Farge, "and what was made by man has become so blended together, or has always been so, that I can choose to look at it as my mood may be, and feel the repose of nature or enjoy the disposing choice of art." Simplicity is the note of gardening art—small gardens needing few hands to keep them in order. Yet order means something much more artistic and particular than with us. Each day in the small garden near the writer's lodging "the gardener appears and attends to one thing after another, even climbing up into the old Pine-tree, taking care of it as he does of the Sweet Peas; and I recall the Japanese gardener whom I knew at our Exposition of 1876, as I saw him for the last time stretched on the ground fanning the opening leaves of some plant that gave him anxiety." It is pleasant to find that the estimate of the Japanese point of view as regards miniature gardens, which has more than once been theoretically explained in these columns, is here echoed by a keen observer who has made practical acquaintance with them and their creators.

The Japanese miniature garden, he says, "can be made of very slight materials, and is occasionally reduced to scarcely anything, even to a little sand and a few stones laid out according to a definite ideal of meaning. A reference to Nature, a recall of the general principles of all landscapes—of a foreground, a distance and a middle distance—that is to say, a little picture—is enough. When they cannot deal with the thing itself—when they can they do it consummately—they have another ideal, which is not so much the making of a real thing as the making of a picture of it. Hence the scale can be diminished without detriment in their eyes until it becomes Lilliputian to ours. All this I take to be an inheritance from China, modified toward simplicity." Mr. La Farge also notes that these little gardens cannot be appreciated by us as they are by the Japanese, "for they have in their arrangement manners of expressing ideas of association, drawing them from nature itself or bringing them out by references to tradition or history, so that I am told they aim to express delicate meanings that a Western imagination can hardly grasp; types, for instance, conveying the ideas of peace and chastity, quiet old age, connubial happiness and the sweetness of solitude. Does this make you laugh, or does it touch you—or both? I wish I knew more about it, for I am sure there is much to say." But, as the writer confesses, there are many points with regard to the artistic ideals of the Japanese where a foreigner cannot inform himself, whether it be because the full import is lost in the mists of antiquity, or because "they reserve it for better minds and worthier apprehensions." The most significant fact made plain in this delightful chapter of Mr. La Farge's is, we repeat, that architecture is not an isolated art, but one intimately involved with the love of nature and with the power of treating it in artistic yet naturalistic ways. A temple is not what we would understand by the name, but is a number of buildings of various kinds "spread with infinite art over large spaces, open or enclosed by trees and rocks. The buildings are but parts of a whole. They are enveloped by Nature, the principle and the adornment of the subtile or mysterious meaning which links them all together."

Notes.

Peaches, green apples, blackberries and huckleberries are coming into market from the Carolinas, and the first Wild Goose plums from California.

It is stated in *The Agitator*, published in Wellsboro, Tioga County, Pennsylvania, that a giant Hemlock was recently felled in Union Township, of that county, from which forty-nine four-foot lengths of bark were peeled.

The last part of *Hooker's Icones Plantarum* (xxi., Part 1) to reach us contains plates 2001 to 2025 inclusive, and is entirely devoted to the illustration and description of Indian Orchids of various genera, none of them of ornamental or horticultural importance.

Lonicera fragrantissima, which the past mild season brought into bloom in January in this vicinity, is named in an Austrian journal as a true winter-blooming species, the flowers of which are as fragrant during the snowy months as those of other Honeysuckles in summer.

A bark laden with 580 sticks of spar-timber from Oregon recently arrived in Boston. The cargo was valued at $150,000, and a portion of it was at once purchased by a shipbuilder of Bath, Maine—a fact which shows how grievously the Maine forests have been denuded of their finest products.

A correspondent in eastern Massachusetts informs us that the Sycamore-trees in that region are all suffering from the disease described in our issue of last week; and that it is many years since they have been in such a deplorable condition as they are at present, although years ago they suffered to almost the same extent from apparently the same cause.

The *California Fruit-Grower* contains a colored plate of the new Rose, Rainbow, which was originated by John Sievers, of San Francisco. It is a sport from Papa Gontier. It is a pink rose splashed with the deeper color of Papa Gontier. It is said to be larger, firmer and more fragrant than its parent, and, besides being more productive, it is superior in its forcing qualities.

Le Journal des Orchidees, of which the sixth issue has now reached us, more than sustains the promise of the earlier numbers. It contains a large amount of practical instruction about Orchids and their cultivation of a character which amateur gowers of these plants find most difficult to obtain, and which is conveyed through its columns in a plain and most satisfactory manner.

An ingenious berry-picking box is described by a writer in the *Orange Judd Farmer* as in use on a fruit farm in Wisconsin. It consists of a tin box just large enough to hold the quart box in which berries are sent to market. The lid is hinged, and in its centre is a small funnel through which the berries are slipped without injury or loss. A strap attached to the box fastens it to the body, leaving both the picker's hands free.

Just as this paper is ready for the press comes the sad announcement of the death of Patrick Barry, of the firm of Ellwanger & Barry, Rochester, New York. Occasion will be taken later to give some account of his eminent services to pomology and horticulture, but we cannot forbear in the moment we have at command to express our feeling of bereavement at the loss of this broad-minded and public-spirited man.

Mr. Alma-Tadema is known to pride himself almost as much upon the archæological accuracy as upon the beauty of his pictures of ancient Roman life. It is no wonder, therefore, that English journals are making merry over the fact that he recently introduced into one of them a representation of *Clematis Jackmanni*, as this now familiar plant is a hybrid variety produced about thirty years ago by Mr. C. Jackmann, of Woking, in Surrey.

The Ninth Annual Meeting of the American Forestry Association will be held in Quebec from the 2d to the 5th of September. All those who attend the meeting should procure receipts from the ticket-agents at the point of departure. Reduced return fares can be secured over roads connected with the Trunk-line Association, provided at least fifty receipts are presented at the meeting for endorsement. Further information can be obtained from Dr. H. M. Fisher, 919 Walnut Street, Philadelphia.

A machine for budding has been invented by Mr. W. M. Rowell, a young man living in Fort Meade, Florida. Mr. Rowell's budder, being "loaded" with a bud, plows under the bark, a pull on the trigger drives the bud in, and it is left in proper position for binding. Mr. Rowell claims that 12,000 buds can be inserted in a day with his budder and that a child can learn the use of it in fifteen minutes. This implement is in some respects like a seed-dropper. The part that holds and inserts the bud is made of different sizes or numbers, adapted to different sizes of buds and stocks. By changing the points it may be used on stocks ranging from an inch down to nearly one-eighth of an inch in diameter.

Mr. C. R. Orcutt writes that the manufacture of syrup from the fruit of the Opuntia may at no far distant day became an important industry in southern California. *Opuntia Ficus-Indica*, or Indian Fig, *O. Tuna* and *O. Tuna-manse* have become naturalized around the old Californian missions. They are natives of Mexico and make rank and rapid growth. The juice of the fruit, which these plants produce in great abundance, may be extracted in a cider press like the juice from apples, and boiled down to a fruity syrup indistinguishable from that manufactured from the watermelon. Excellent vinegar may also be made from the juice. In Mexico these Cacti are extensively cultivated for their fruit.

So few places in the Central Park are disfigured by inappropriately placed formal flower-beds that the one near the Mineral Spring, to the north of the large sheep-meadow, is a surprising sight. A long, low rock lies here, beyond a narrow stretch of lawn, partly covered with Virginia Creeper and other vines and overhung by tall Sumachs, a Chestnut of shrub-like habit, and a Wild Cherry. No rock on the borders of a New England pasture could look more natural, yet close in front of it, following its outline, now lies a great bed set with Scarlet Geraniums, Coleus and Vincas, arranged in formal patterns. Fortunately, it is invisible except to those who pass along the somewhat unfrequented path, and one can only hope that it is not a prophecy of more numerous errors to come.

At the recent great horticultural exhibition in Berlin the prize for the finest Orchid grown in Germany was given to Herr Bouche, of Endenich, for a plant of *Cymbidium Lowianum*. But it is said that his success was owing to the rapid fading of a *Phajus tuberculosus* exhibited by Herr Lackner, of Steglitz. This species had bloomed but three times before in England, and never on the Continent, and the plant in question was greatly admired in the brief period during which its flowers remained in good condition. One of the most remarkable exhibits was a collection of 250 species of Cactus shown by Herr Gruson, an amateur of Magdeburg-Buckau, which received the "prize of honor," a large silver medal given by the state. There were 634 exhibitors in the different departments of the display.

We learn from the *Pacific Rural Press* that the state of California has received from Mr. Abbot Kinney, of Lamanda Park, a donation of many thousand young forest-trees, reared at that gentleman's expense. In making this presentation he has selected the State Board of Forestry as the proper channel for the direction of them to the best uses. Such of these trees as are not required to perfect their own plantations will be distributed during the coming season to such applicants as will conform to the Board's request to furnish the customary reports as to locality planted, growth made, conditions observed, etc. In selecting the State Board as the medium for the dissemination of these trees, Mr. Kinney was doubtless influenced by the knowledge that the intelligent direction of the chairman of the Board, Hon. Walter S. Moore, to promote the cause of forest-planting would be fully exercised to insure such disposition of this gift as would result in the greatest benefit to the people of the whole state.

A few weeks ago one of the most interesting old houses in New York State was destroyed by fire. This was the Hogeboom homestead, at Claverack, near Hudson, known to recent generations as the "Watson Webb House." It was built by Jacobus Hogeboom in 1727 on a tract of land which his father, Kiliaen, had purchased from Chancelor Livingston. Its façade measured sixty-three feet and was adorned by a deep porch, while an immense Ivy had nearly covered both porch and wall. The interior was treated in the characteristic Dutch way, with carved and tiled mantels, and, it is said, mural paintings. Before the Revolutionary War broke out the house had come into the possession of General Watson Webb, who had married a grand-daughter of its founder. During a visit made by Lafayette he scratched his name and the date on a window-pane, which, of course, was thereafter guarded as a precious relic. And every child in America should regret the destruction of the mansion, since under its roof Moore wrote "'Twas the night before Christmas."